SUPPORT FOR THE AMENDMENT

Support for claim 25 is found on page 3, lines 8-9 of the specification. Support for claim 26 is found on page 3, lines 11-13 of the specification. Support for claim 27 is found on page 3, lines 30-32 of the specification. Support for claims 28-30 is found on page 8, lines 32-34 of the specification. Support for claims 31-32 is found on page 8, lines 39-41 of the specification. No new matter would be added to this application by entry of this amendment.

Upon entry of this amendment, claims 12-32 will now be active in this application.

REQUEST FOR RECONSIDERATION

The claimed invention is directed to an integral polyurethane foam, a process for producing integral polyurethane foam and articles comprising an integral polyurethane foam.

Applicants wish to thank examiner Winkler and supervisory patent examiner Eashoo for the helpful and courteous discussion held with their U.S. representative on March 5, 2008. At that time, applicants' U.S. representative argued that there would be no motivation to modify the ethylene oxide content beyond the disclosed 25-35 wt%, to be within the claimed at least 50 wt% as the reference discloses such an second polyether polyol as behaving in a synergistic fashion with the random copolymer of ethylene oxide and propylene oxide such that there would be no motivation to deviate from the disclosed synergistic combination. The following is intended to expand upon the discussion with the examiners.

Integral polyurethane foams have found many uses, however under some conditions have suffered difficulties with respect to hydrolysis resistance and swelling resistance. Accordingly, research continues into polyurethane foams having good hydrolysis resistance and mechanical properties.

The claimed invention addresses the problem by providing an integral polyurethane foam obtainable by reacting a polyisocyanate prepolymer with a polyether polyol mixture

comprising b1) an alkoxylated **bifunctional starter** molecule having **at least 50 wt% ethylene oxide units** and at least 5% of the ethylene oxide as an EO end cap; and b2) an alkoxylated **tri- or tetrafunctional starter** molecule containing **at least 50 wt% of ethylene oxide units** and at least 5% of the ethylene oxide units being present as an EO end cap, and a chain extender. Applicants have discovered that a combination of bifunctional starter and tri- or tetrafunctional starter having at least 50 wt% of ethylene oxide and at least 5% of the ethylene oxide being present as an EO end cap to provide for an integral foam having good hydrolysis resistance. Such an integral foam is nowhere disclosed or suggested in the cited references of record.

The rejection of claims 12-16 and 19-24 under 35 U.S.C. § 103(a) over Lin (U.S. 6,031,010) in view of WO 01/32735 and of Claim 17 in further view of Symons (U.S. 2002/0193493) are respectfully traversed.

None of the cited references of record disclose or suggest a polyurethane foam in which the polyol component comprises a mixture of an alkoxylated bifunctional starter and an alkoxylated tri- or tetrafunctional starter each having more than 50% by weight of ethylene oxide and at least 5% of the ethylene oxide being present as an EO end cap.

Lin describes a polyurethane foam comprising the reaction product of a) an isocyanate-terminated prepolymer of a first ethylene oxide capped polyether polyol; and b) an isocyanate reactive composition comprising b i) a chain extending agent, b ii) a second ethylene oxide capped polyether polyol and b iii) a random copolymer of ethylene oxide and propylene oxide (column 1, line 60 through column 2, line 14). The isocyanate reactive composition comprises a second polyether polyol having an ethylene oxide content of **at least 25%** and a random copolymer of ethylene oxide and propylene oxide having an ethylene oxide content of at least 65% (column 2, lines 16-65). The second polyether polyol **preferably** has an ethylene oxide content of **about 25-35%** (column 6, lines 45-63).

Accordingly, the reference describes a polyisocyanate reactive composition comprising two polyols, a second polyether polyol having an ethylene oxide content of at least 25%, preferably 25-35%, and a copolymer having an ethylene oxide content of at least 65% by weight.

In contrast, the claimed invention is directed to an integral polyurethane foam in which the polyether polyol mixture comprises b1) an alkoxylated bifunctional starter with an ethylene oxide content of more than 50% by weight and b2) an alkoxylated tri- or tetrafunctional starter with an ethylene oxide content of more than 50% by weight. The cited reference fails to disclose or suggest a polyether polyol mixture in which two polyether polyol components each have an ethylene oxide content of 50% or more by weight and at least 5% EO as an end cap.

Applicants respectfully submit that it would not be obvious to increase the ethylene oxide content of the second polyether polyol, beyond the preferred 25-35 wt. % as such a polyether polyol has been identified as behaving synergistically with the copolymer.

The reference describes at column 7, lines 23-28 that the combination of two types of high ethylene oxide polyether polyols **act synergistically**, the combination of the two polyether polyols resulting in an integral skin polyurethane foam having improved and unexpected flex properties. Accordingly, while the reference describes the combination of a polyol having an ethylene oxide content of at least 25%, preferably 25-35 wt.% and a copolymer having an ethylene oxide content of at least 65 wt. %, there would be no motivation to increase the preferred 25-35 wt% of ethylene oxide for the second polyether polyol as the reference describes the combination of polyols to behave in a synergistic fashion.

> A greater than expected result is an evidentiary factor pertinent to the legal conclusion of obviousness ... of the claims at issue. *In re Corkill*, 711 F.2d 1496, 226 USPQ 105 (Fed. Cir. 1985) M.P.E.P. § 716.02(a).

As the reference describes the combination of polyols in the isocyanate reactive composition as acting synergistically and there would be no expectation that compositions outside the disclosed range would behave also synergistically. Therefore, there would be no motivation to deviate from the preferred disclosure of an ethylene oxide content of 25-35 wt.% as such has been identified in the reference as behaving synergistically. As an identified synergistic combination, those of skill in the art would not be motivated to deviate from such a combination as it would be difficult to expect any improvements beyond the observed greater than additive effect described for the specific combination.

Accordingly, the claimed invention is clearly not rendered obvious from the cited reference.

The basic deficiencies of the primary reference are not cured by Parfondry et al of Symons.

While Parfondry et al. has been cited for a specific propylene oxide/ethylene oxide polyol, the teaching of such a polyol component cannot render obvious the claimed mixture of polyols each having at least 50% ethylene oxide as it would not have been obvious to modify the primary reference to increase the ethylene oxide content beyond the preferably disclosed 25-35 wt.%, the content which is disclosed as acting synergistically with the copolymer.

Symons has merely been cited to disclose a silicate sheet but fails to disclose or suggest the claimed mixture of polyether polyols.

As the cited references fail to disclose or suggest the claimed combination of polyether polyols, the claimed invention is clearly not rendered obvious by the cited references and accordingly withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

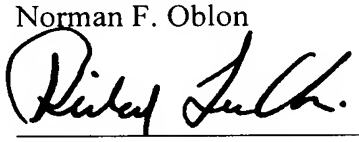
The objection to claim 13 has been obviated by appropriate amendment. Applicants have now amended claim 13 to recite the dependency as examined by the examiner.

Applicants have noted the headings which have been suggested by the examiner, but note that the specification, provides, sections as noted in 37 C.F.R. 1.177(b), in the order suggested. Accordingly it is not applicable to require introduction of such section headings.

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Richard L. Chinn, Ph.D.
Registration No. 34,305

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)